



**STATE OF WISCONSIN**  
Department of Agriculture,  
Trade and Consumer Protection

**Approval # 20170003**  
(Replaces 20140005R1)

Bureau of Weights and Measures  
Storage Tank Regulation  
P.O. Box 7837  
Madison, WI 53707-7837

## **Wisconsin ATCP 93 Material Approval**

**Equipment:** Autolearn Line Leak Detector  
(Incon TS-LS300 / EBW AS-LS300)

**Manufacturer:** Franklin Fueling Systems  
3760 Marsh Rd.  
Madison, WI 53718

**Expiration of Approval:** December 31, 2020

---

### **SCOPE OF EVALUATION**

The Franklin Fueling Systems Electronic Line Leak Detection Systems, marketed as the INCON TS-LS300 or the EBW AS-LS300, were evaluated as a means of automatic line leak detection and line tightness testing for both rigid and flexible piping in accordance with **s. ATCP 93.510(4)**.

This evaluation summary is condensed to provide the specific installation, application and operational parameters necessary to maintain the subject systems in compliance with the Wisconsin Administrative Code – ATCP 93.

### **DESCRIPTION AND USE**

The INCON TS-LS300 or the EBW AS-LS300 Auto-Learn Line Leak Detection systems may both be used on pipelines containing gasoline, diesel, ethanol, methanol, aviation fuel, fuel oil #4, waste oil and kerosene.

Both of the INCON TS-LS300 and the EBW AS-LS300 systems consist of a control box with encoded lights to indicate test conditions, a pressure transducer in the line and a microprocessor to evaluate the data from the transducer. The functional element set point is set below the pump operating pressure so that when the pump is shut off, the functional element will close to isolate the piping system and the leak detector will be able to detect a leak based on the pressure drop. Both systems have three leak detection modes - Hourly, Monthly, and Annual.

Hourly tests for 3 gal/h leaks are initiated after each dispense cycle or after 45 minutes of quiet time. The test consists of 3 consecutive tests, timed at 5-minute intervals. If one of the three tests passes, the line is determined to have no Gross leak. If there is a failure, the test will continue until three consecutive tests fail. Three failures will cause the alarm light to blink, the alarm horn to sound, and the pump to shut down. If there is dispensing from the line during the testing process, the testing will restart as soon as dispensing is complete. During dispensing inactivity the Gross (3 GPH) test will repeat every 45 minutes after passing tests, or until there has been no dispensing (line inactive) for 3 hours.

Monthly Monitoring for 0.20 gal/h leaks is automatically initiated each time the line has been inactive for 3 hours. This test will be performed every 5 minutes until a test has passed. If there are three consecutive failures, with no passes, the alarm light will flash, and the horn will sound, indicating that there is a precision leak in the system. This alarm indication will not shut down the pump.

The Annual Line Tightness Test for 0.10 gal/h leaks is initiated after the line has been inactive for 6 hours. This test will be performed every 5 minutes until a test has passed. If there are three consecutive failures, with no passes, the alarm light will flash, and the horn will sound, indicating that there is a precision leak in the system. This alarm indication will not shut down the pump.

## **TESTS AND RESULTS**

Testing of the Franklin Fueling Systems Electronic Line Leak Detector for hourly, monthly, and annual pipeline tightness testing was conducted in accordance with either the EPA Pressurized Pipeline Leak Detection Systems protocol (rigid piping) or a modified version of same protocol adapted for flexible piping. When using leak declaration thresholds of 1.5 gph, 0.10 gph, and 0.05 gph, the probabilities of detection for a leak of 3.0, 0.20 and 0.10 gph, respectively, were certified to within the 95-5 ranges required by the EPA protocols.

## **LIMITATIONS / CONDITIONS OF APPROVAL**

### **General**

- All monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer instructions, and certified every 12 months for operability, proper operating condition, and proper calibration. Records of sampling, testing, or monitoring shall be maintained in accordance with **ATCP 93.500(9)(c)**.
- The manufacturer shall submit for a revision to this Wisconsin Material Approval application if any of the functional performance capabilities of this equipment are revised. This would include, but not be limited to changes in software, hardware, or methodology.
- When installing the TS-LS300 auto-learn line leak detection system, a third party precision tightness test shall be performed prior to beginning the auto-learn process. The precision tightness test results shall be included with the line leak detection form TR-WM-133 (formerly

ERS-9LD) submittal to the Department.

- An annual test of the operation of the leak detector shall be conducted in accordance with the manufacturer requirements for testing to the recognized leak thresholds by inducing a physical line leak. The individual performing the test must be qualified by the equipment manufacturer.
- The system may be used with trapped vapor present in the line.
- **Mechanical line leak detectors cannot be installed in the same line as the electronic line leak detector.**
- Critical performance parameters for the **Electronic Line Leak Detector:**

Parameter	Value
Total maximum allowable volume of product in any <b>flexible</b> test pipeline	<b>39.5 gallons or less</b>
Total maximum allowable volume of product in any <b>rigid</b> test pipeline	<b>163 gallons or less</b>

**Note:** All other critical parameters, such as test line pressure; minimum test times; minimum wait times between product dispensing and start of test are pre-programmed into the software and are not accessible for viewing.

This approval will be valid through December 31, 2017, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Material Approval Number must be provided when plans that include this product are submitted for review.

### **DISCLAIMER**

The Department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement unless specified in this document.

Effective Date: November 6, 2017

Approved by: \_\_\_\_\_  
Erik Otterson  
Environmental Engineering Specialist  
Storage Tank Regulation  
Bureau of Weights and Measures

Date: November 6, 2017

Approved by: \_\_\_\_\_  
Greg Bareta, P. E.  
Section Chief  
Storage Tank Regulation  
Bureau of Weights and Measures

Date: November 6, 2017